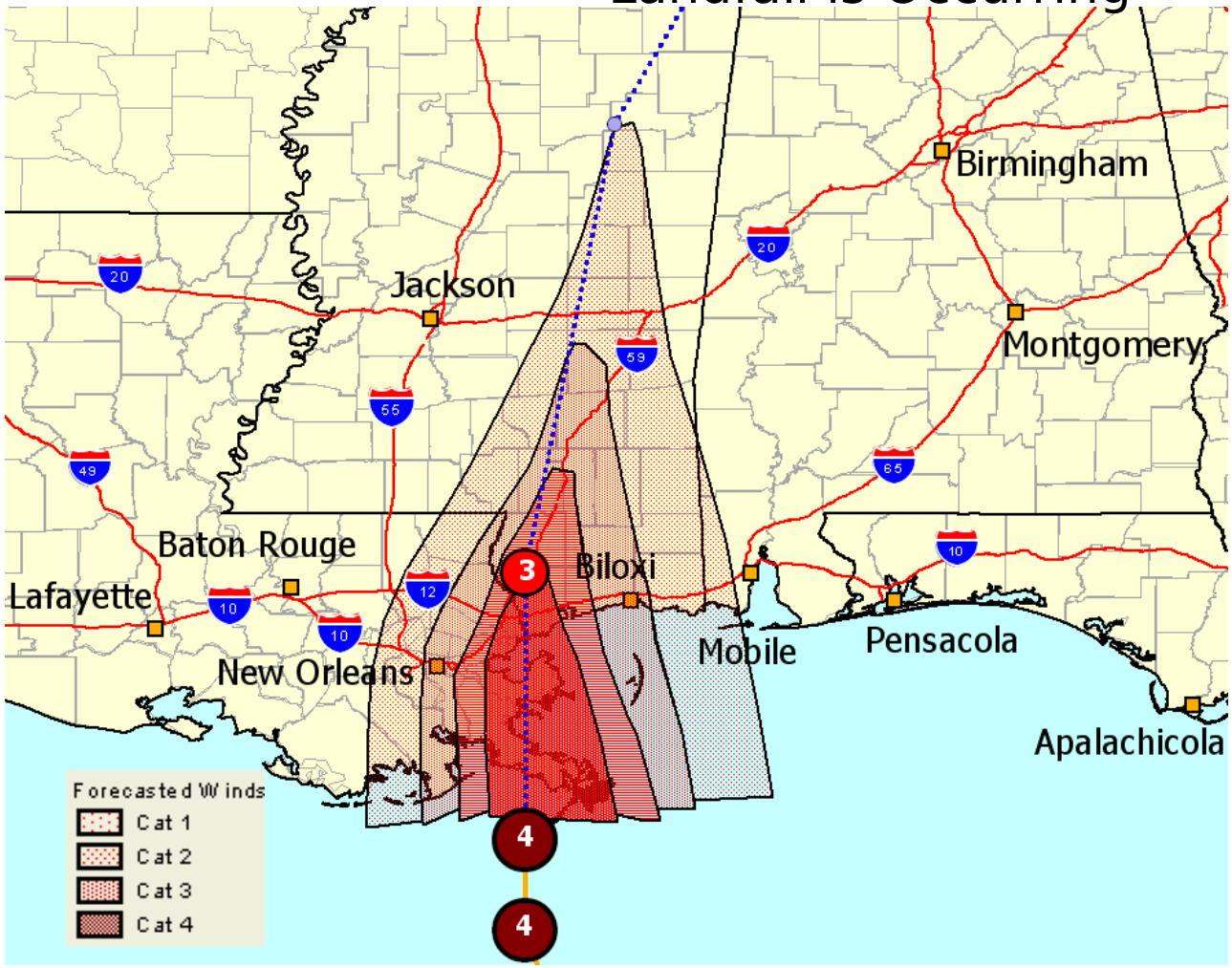
Hurricane Katrina Wind Distribution

Landfall is Occurring

For Official Use Only!



Most Probable Landfall Wind Distribution

This model is based on a Category 4 storm making landfall in near proximity to New Orleans, LA.

Information provided on this page displays a Category 4 storm making landfall near New Orleans, LA. These projections are based on information from the NHC ***(0500 EDT 08/29/2005)*** forecast.

Details about this model may be obtained at https://englink.usace.army.mil or contact ENGLink at 1-877-936-4546

US Army Corps of Engineers

Hurricane Katrina Wind Fields

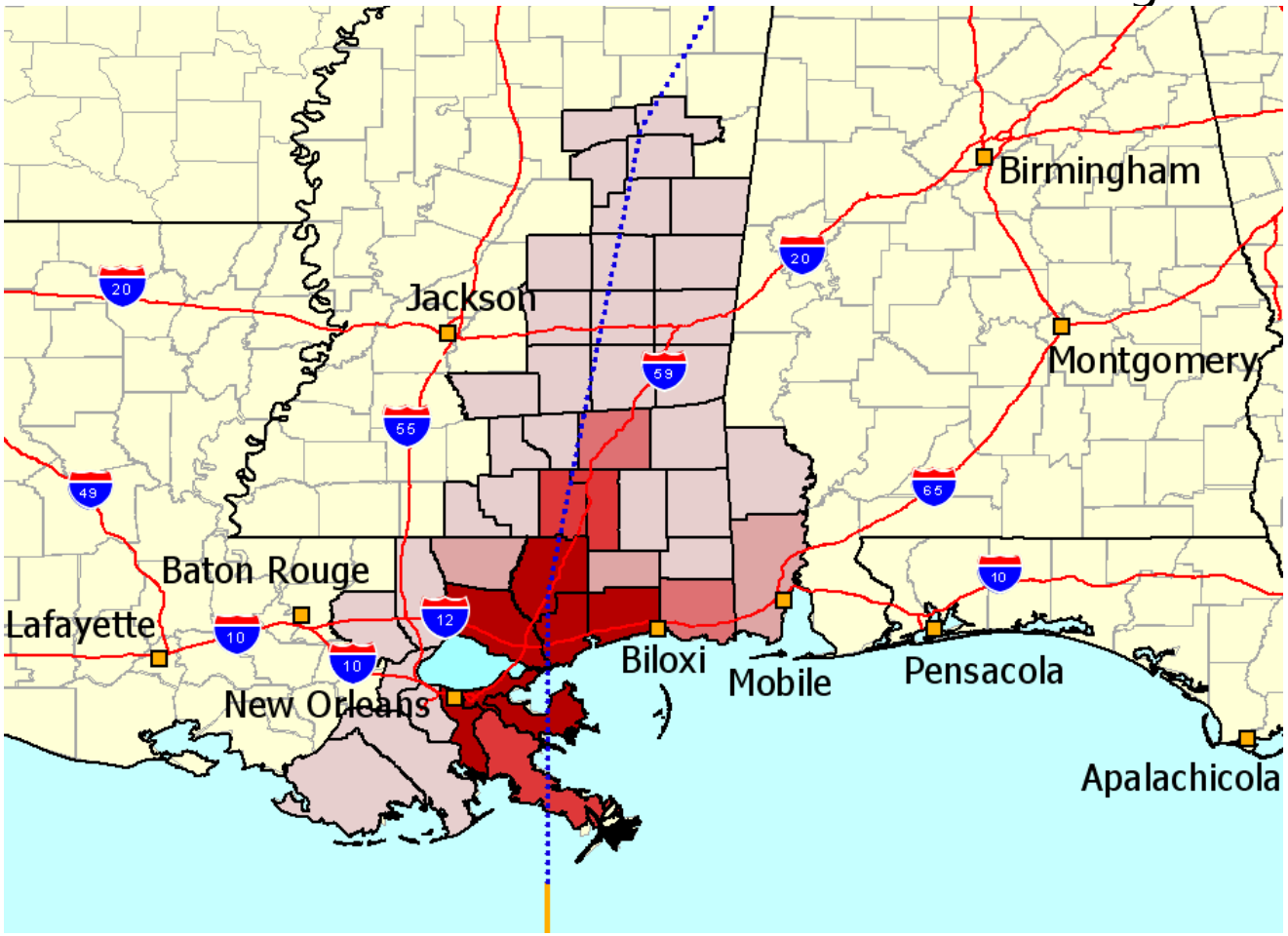
Generated By:
Terry Siemsen, LRL 0700 EDT 08/29/2005

Sources:
HURREVAC
LRL-DEBRIS

Hurricane Katrina Debris Model

Landfall is Occurring

For Official Use Only!



Most Probable Landfall Debris Model Results

Louisiana – 19,014,000 yd³
Mississippi – 7,974,000 yd³
Alabama – 306,000 yd³

Model results per parish/county on following page

This model is based on a Category 4 storm making landfall in near proximity to New Orleans, LA.

Information provided on this page displays a Category 4 storm making landfall near New Orleans, LA. These projections are based on information from the NHC ***(0500 EDT 08/29/2005)*** forecast. The amount of debris forecasted is possible total volume, not necessarily the volume that may need to be removed with Federal funds.

Details about this model may be obtained at https://englink.usace.army.mil or contact ENGLink at 1-877-936-4546

US Army Corps of Engineers

Hurricane Katrina Debris Model

Generated By:
Terry Siemsen, LRL 0700 EDT 08/29/2005

Sources:
HURREVAC
LRL-DEBRIS

Hurricane Katrina Debris Model

Landfall is Occurring

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State	Yards Per State	Parish	Yards per Parish
		Jefferson	5,289,000
		Lafourche	96,000
		Livingston	2,000
		Orleans	7,373,000
		Plaquemines	774,000
		St Bernard	1,919,000
		St Charles	94,000
		St John Baptist	62,000
		St Tammany	3,177,000
		Tangipahoa	58,000
		Terrebonne	19,000
		Washington	151,000
Louisiana	19,014,000		19,014,000

State	Yards Per State	County	Yards per County
		Mobile	225,000
		Washington	81,000
Alabama	306,000		306,000

State	Yards Per State	County	Yards per County
		Choctaw	1,000
		Clarke	24,000
		Clay	1,000
		Covington	48,000
		Forrest	565,000
		George	36,000
		Greene	18,000
		Hancock	1,840,000
		Harrison	2,342,000
		Jackson	455,000
		Jasper	75,000
		Jeff'n Davis	11,000
		Jones	346,000
		Kemper	6,000
		Lamar	520,000
		Lauderdale	85,000
		Leake	1,000
		Marion	49,000
		Neshoba	42,000
		Newton	35,000
		Noxubee	1,000
		Oktibbeha	25,000
		Pearl River	1,136,000
		Perry	52,000
		Scott	8,000
		Simpson	2,000
		Smith	29,000
		Stone	131,000
		Walthall	30,000
		Wayne	31,000
		Webster	1,000
		Winston	28,000
Mississippi	7,974,000		7,974,000

The amount of debris forecasted is possible total volume, not necessarily the volume that may need to be removed with Federal funds.

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US Army Corps of Engineers

Hurricane Katrina Debris Model

Generated By:
Terry Siemsen, LRL 0700 EDT 08/29/2005

Sources:
HURREVAC
LRL-DEBRIS

Hurricane Katrina Ice Model

Landfall is Occurring

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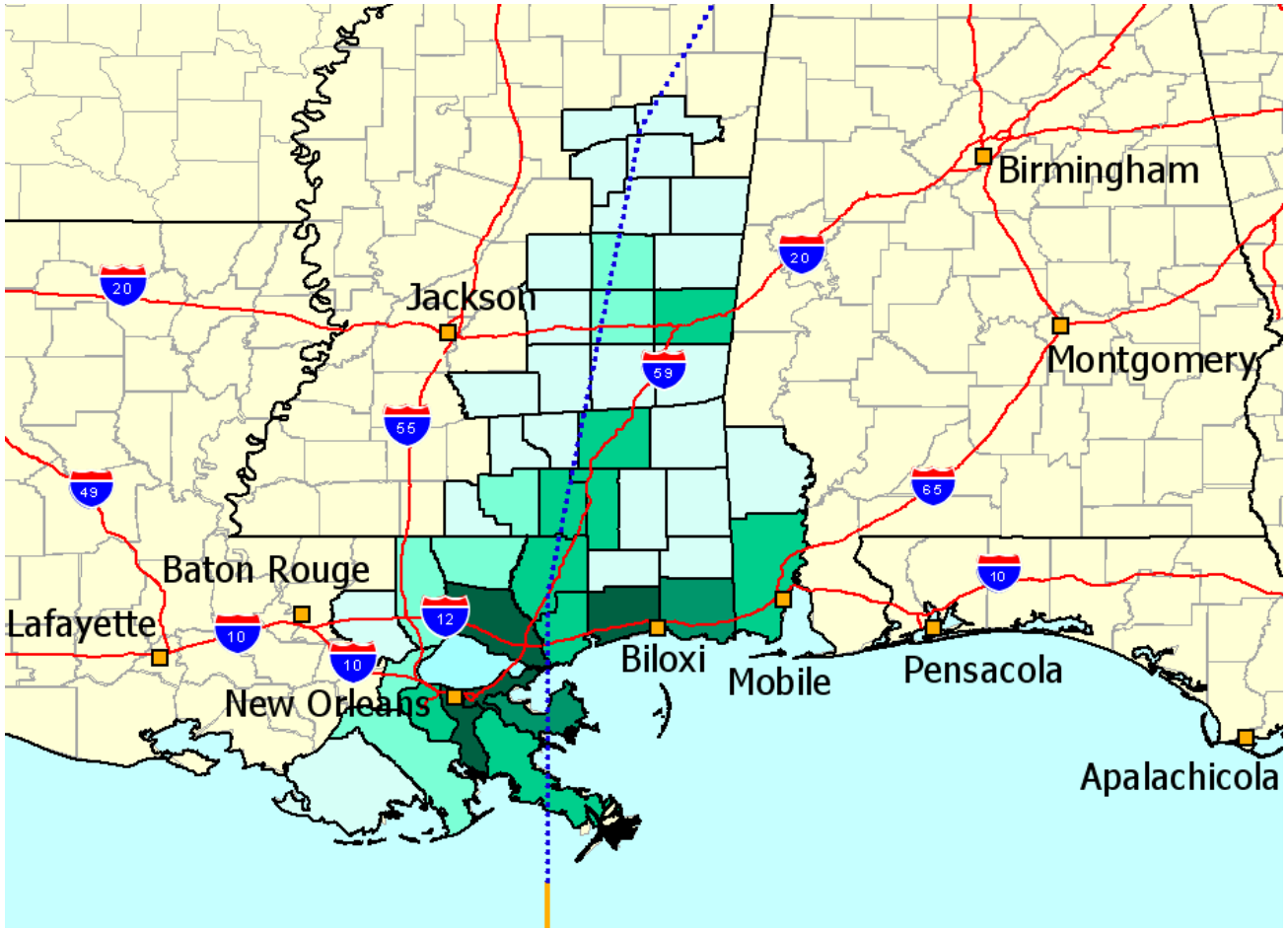

Most Probable Landfall Ice Model Results

Louisiana –
27 Truckloads Day One
54 Truckloads Day Two
108 Truckloads Day Three

Mississippi –
19 Truckloads Day One
37 Truckloads Day Two
74 Truckloads Day Three

Alabama –
1 Truckloads Day One
3 Truckloads Day Two
6 Truckloads Day Three

Information provided on this page displays a Category 4 storm making landfall near New Orleans, LA. These projections are based on information from the NHC ***(0500 EDT 08/29/2005)*** forecast. The amount of ice forecasted is based on Mission Guide Book requirements (8 pounds per day per person) and Ice SME input and represents a first day daily need.

Details about this model may be obtained at **https://englink.usace.army.mil** or contact ENGLink at 1-877-936-4546

US Army Corps of Engineers

Hurricane Katrina Ice Model

Generated By:
Terry Siemsen, LRL 0700 EDT 08/29/2005

Sources:
HURREVAC
LRL-DEBRIS

Hurricane Katrina Ice Model

Landfall is Occurring

For Official Use Only!

Ice/Water Commodities - Trucks/Distribution Lanes Ramp-up
(Number of Trucks Each Commodity and Lanes Anticipated - end of each day)

	Day One (25%)*	Day Two (50%)*	Day Three (100%)*	Commodity Trucks Day 1-3 Total	Within Hurricane Force Winds Population	Households
NHC Forecast Track						
Louisiana	27	54	108	189	1,351,000	511,000
Mississippi	19	37	74	130	926,000	348,000
Alabama	1	3	6	10	73,000	26,000
Total	**47**	**94**	**188**	**329**	**2,350,000**	**885,000**

Key assumption is that establishment of distribution lanes will be the limiting factor.

* Assumption is that States/locals (FL is the * exception) will have the capability to establish about 25% of needed distribution lanes in the first 24 hours post-landfall, about 50% of needed distribution lanes in the first 48 hours after landfall, and all needed lanes by 72 hours post landfall. Florida, due to past experience, estimates they can establish up to 50 distribution lanes per day.

** **Assumption for Katrina** - Assumption is that 40 percent of the resident population will require ice/water due to power outages in areas experiencing hurricane force winds

The amount of ice forecasted is based on Mission Guide Book requirements (8 pounds per person) and Ice SME input and represents a first day daily need. The assumption in this scenario is that 40% of the resident population affected by Katrina will have power outage in this area will cause a need for ice.

Details about this model may be obtained at
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or contact ENGLink at 1-877-936-4546

Hurricane Katrina Water Model

Landfall is Occurring

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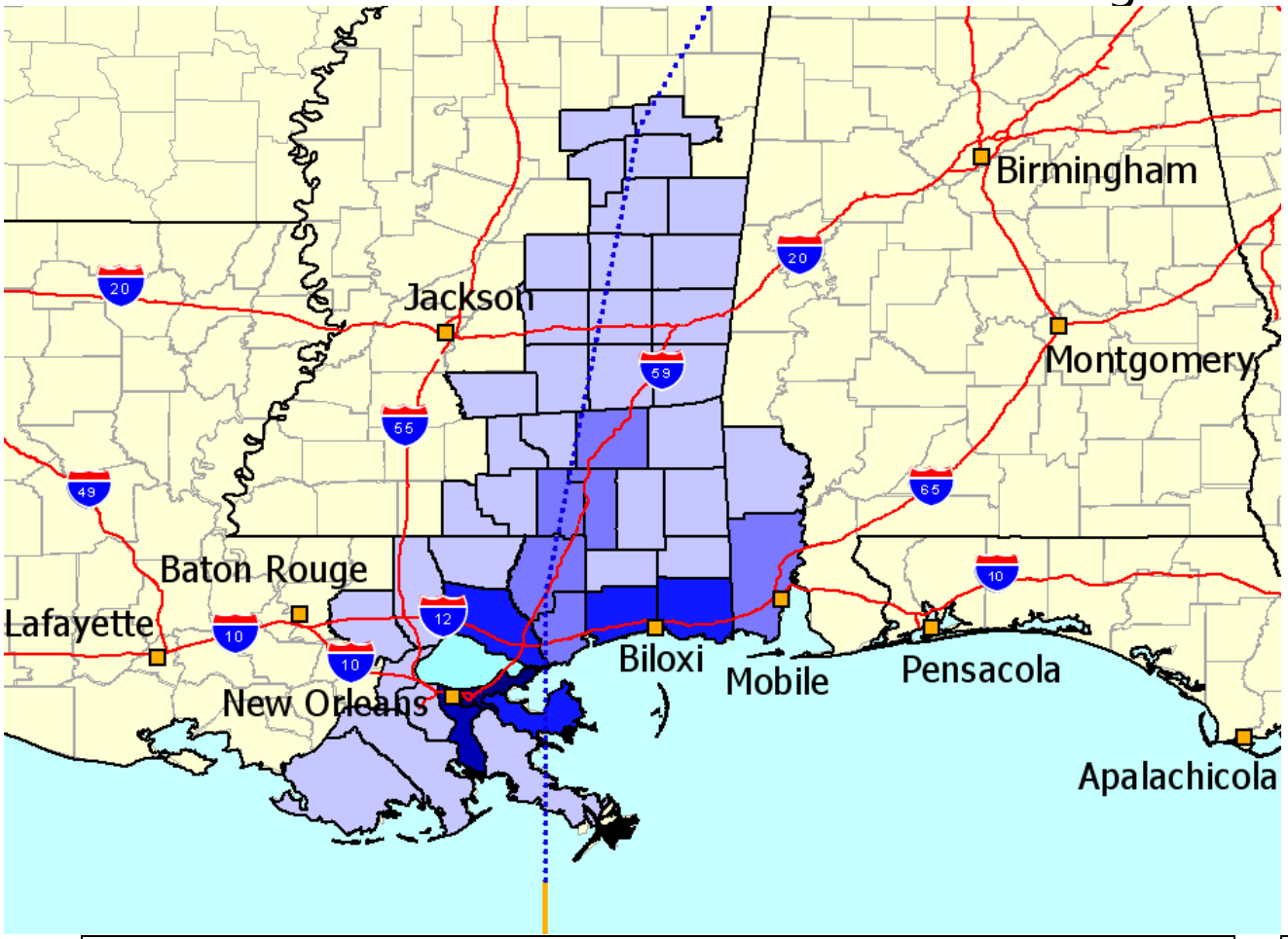

Most Probable Landfall Water Model Results

Louisiana –
27 Truckloads Day One
54 Truckloads Day Two
108 Truckloads Day Three

Mississippi –
19 Truckloads Day One
37 Truckloads Day Two
74 Truckloads Day Three

Alabama –
1 Truckloads Day One
3 Truckloads Day Two
6 Truckloads Day Three

Information provided on this page displays a Category 4 storm making landfall near New Orleans, LA. These projections are based on information from the NHC ***(0500 EDT 08/29/2005)*** forecast. The amount of water forecasted is based on Mission Guide Book requirements (3 liters per person per day) and Water SME input and represents a first day daily need.

Details about this model may be obtained at **https://englink.usace.army.mil** or contact ENGLink at 1-877-936-4546

US Army Corps of Engineers

Hurricane Katrina Water Model

Generated By:
Terry Siemsen, LRL 0700 EDT 08/29/2005

Sources:
HURREVAC
LRL-DEBRIS

Hurricane Katrina Water Model

Landfall is Occurring

For Official Use Only!

Ice/Water Commodities - Trucks/Distribution Lanes Ramp-up
(Number of Trucks Each Commodity and Lanes Anticipated - end of each day)

	Day One (25%)*	Day Two (50%)*	Day Three (100%)*	Commodity Trucks Day 1-3 Total	Within Hurricane Force Winds Population	Households
NHC Forecast Track						
Louisiana	27	54	108	189	1,351,000	511,000
Mississippi	19	37	74	130	926,000	348,000
Alabama	1	3	6	10	73,000	26,000
Total	**47**	**94**	**188**	**329**	**2,350,000**	**885,000**

Key assumption is that establishment of distribution lanes will be the limiting factor.

* Assumption is that States/locals (FL is the * exception) will have the capability to establish about 25% of needed distribution lanes in the first 24 hours post-landfall, about 50% of needed distribution lanes in the first 48 hours after landfall, and all needed lanes by 72 hours post landfall. Florida, due to past experience, estimates they can establish up to 50 distribution lanes per day.

** **Assumption for Katrina** - Assumption is that 40 percent of the resident population will require ice/water due to power outages in areas experiencing hurricane force winds

The amount of water forecasted is based on Mission Guide Book requirements (3 liters per person) and Water SME input and represents a first day daily need. The assumption in this scenario is that 40% of the resident population affected by Katrina will have power outage in this area will cause a need for water.

Details about this model may be obtained at **https://englink.usace.army.mil** or contact ENGLink at 1-877-936-4546

Hurricane Katrina Population Model

Landfall is Occurring

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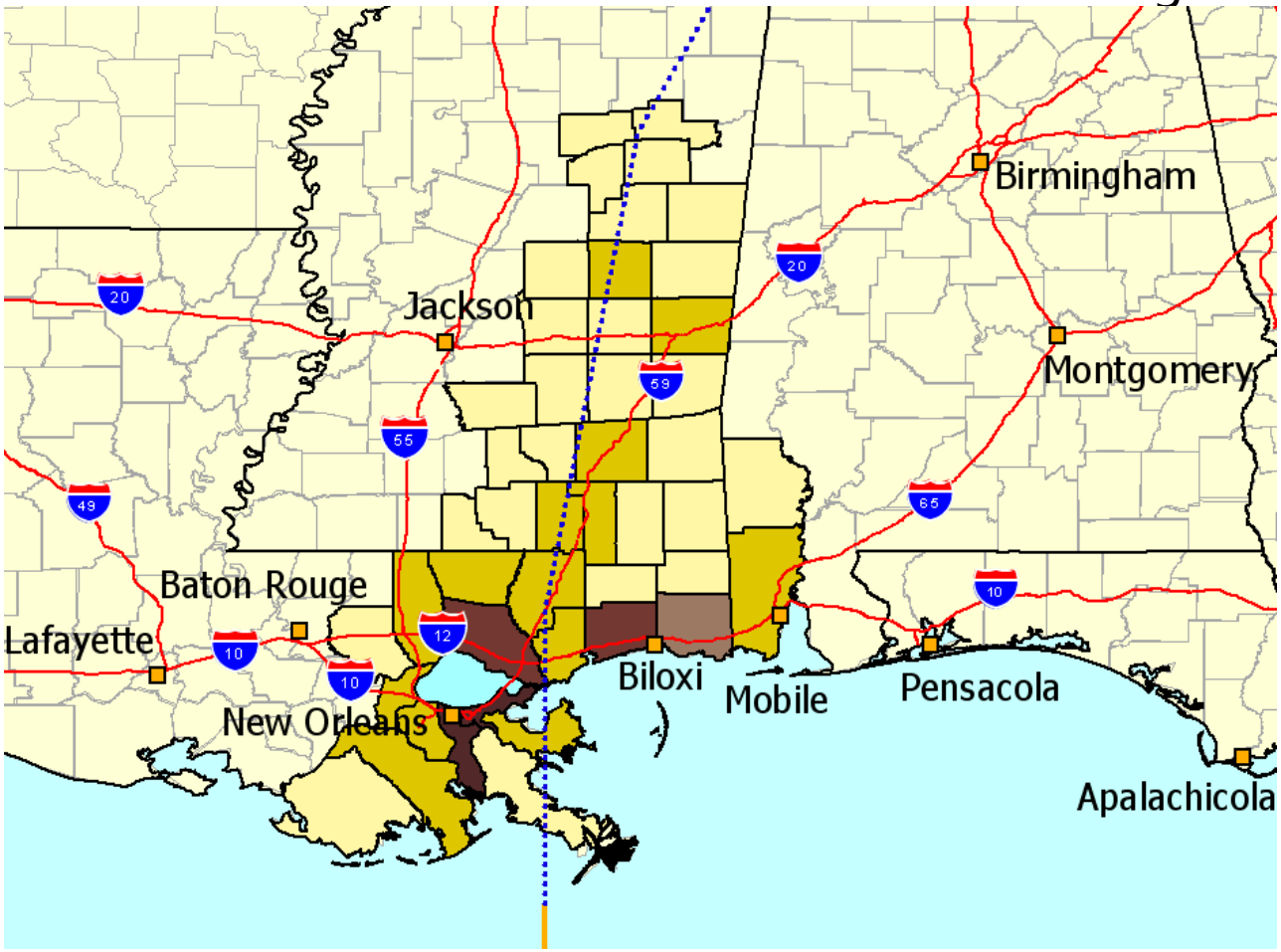

Most Probable Landfall Population Model Results

Louisiana –1,351,000 persons
Mississippi – 926,000 persons
Alabama – 73,000 persons

Model results per county on following page

This model is based on a Category 4 storm

Information provided on this page displays a Category 4 storm making landfall near New Orleans, LA. These projections are based on information from the NHC ***(0500 EDT 08/29/2005)*** forecast. The number of persons included in this model output are those that would be included within estimated hurricane force winds (Census 2000 values).

Details about this model may be obtained at https://englink.usace.army.mil or contact ENGLink at 1-877-936-4546

US Army Corps of Engineers **Hurricane Katrina Population Model**

Generated By:
Terry Siemsen, LRL 0700 EDT 08/29/2005

Sources:
HURREVAC
LRL-DEBRIS

Hurricane Katrina Population Model

Landfall is Occurring

For Official Use Only!

State	Population Per State	Parish	Population Per Parish
		Jefferson	420,000
		Lafourche	38,000
		Livingston	1,000
		Orleans	460,000
		Plaquemines	22,000
		St Bernard	66,000
		St Charles	47,000
		St John Baptist	38,000
		St Tammany	178,000
		Tangipahoa	36,000
		Terrebonne	10,000
		Washington	35,000
Louisiana	1,351,000		1,351,000

State	Population Per State	County	Population Per County
		Mobile	72,000
		Washington	1,000
Alabama	73,000		73,000

State	Population Per State	County	Population Per County
		Choctaw	1,000
		Clarke	15,000
		Clay	1,000
		Covington	19,000
		Forrest	73,000
		George	19,000
		Greene	13,000
		Hancock	43,000
		Harrison	190,000
		Jackson	132,000
		Jasper	18,000
		Jeff'n Davis	7,000
		Jones	65,000
		Kemper	4,000
		Lamar	39,000
		Lauderdale	46,000
		Leake	1,000
		Marion	24,000
		Neshoba	26,000
		Newton	22,000
		Noxubee	1,000
		Oktibbeha	15,000
		Pearl River	49,000
		Perry	12,000
		Scott	5,000
		Simpson	1,000
		Smith	14,000
		Stone	14,000
		Walthall	19,000
		Wayne	19,000
		Webster	1,000
		Winston	18,000
Mississippi	926,000		926,000

The number of persons estimated to be within hurricane force winds comes from Census 2000 values.

Details about this model may be obtained at https://englink.usace.army.mil or contact ENGLink at 1-877-936-4546

US Army Corps of Engineers

Hurricane Katrina Population Model

Generated By:
Terry Siemsen, LRL 0700 EDT 08/29/2005

Sources:
HURREVAC
LRL-DEBRIS

Hurricane Katrina Households Model

Landfall is Occurring

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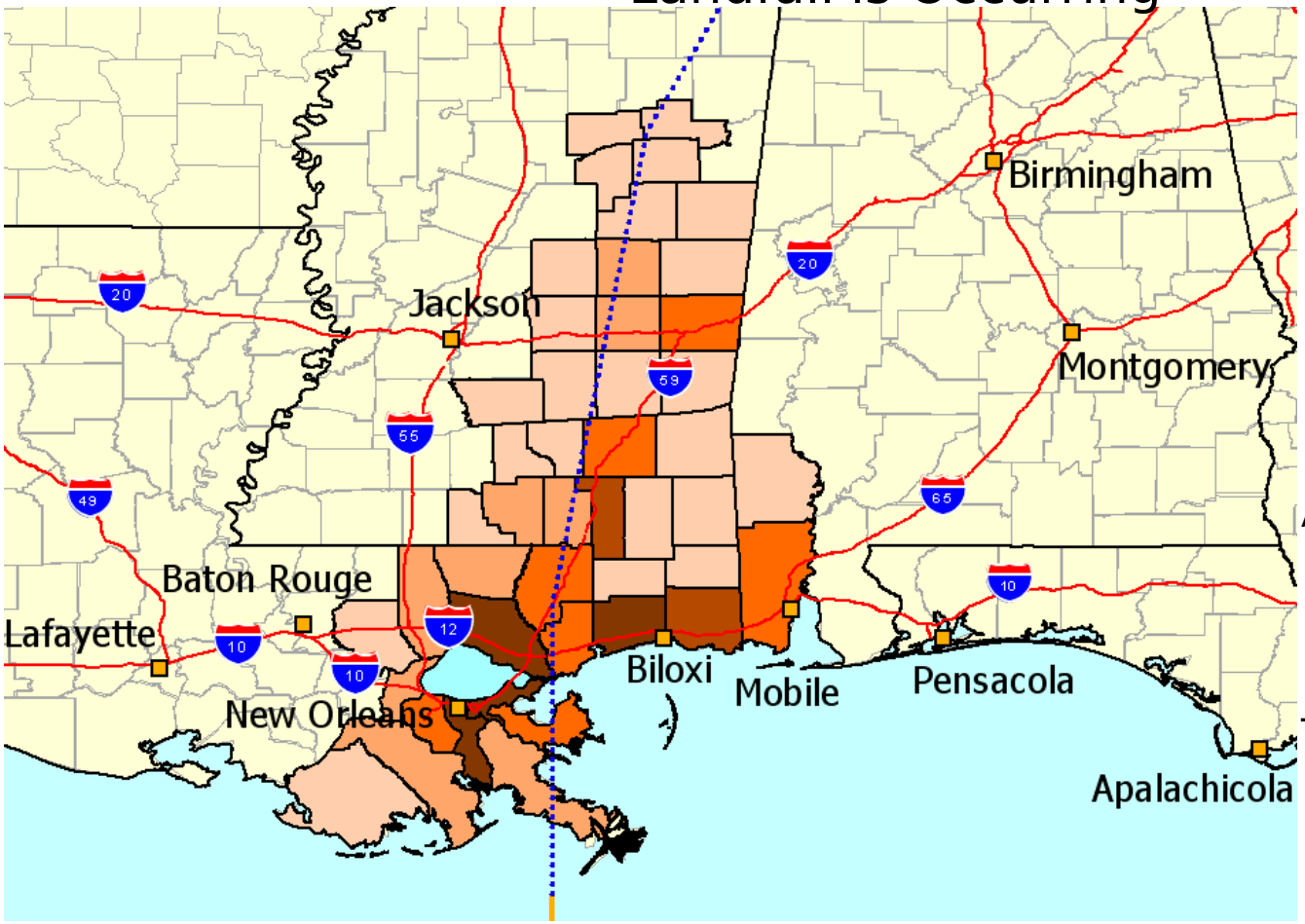

Most Probable Landfall Households Model Results

Louisiana - 511,000 households Mississippi - 348,000 households
Alabama - 26,000 households

Model results per county on following page

This model is based on a Category 4 storm making landfall in near proximity to New Orleans, LA

Information provided on this page displays a Category 4 storm making landfall near New Orleans, LA. These projections are based on information from the NHC ***(0500 EDT 08/29/2005)*** forecast. The number of households included in this model output are those that would be included within estimated hurricane force winds (Census 2000 values).

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US Army Corps of Engineers

Hurricane Katrina Households Model

Generated By:
Terry Siemsen, LRL 0700 EDT 08/29/2005

Sources:
HURREVAC
LRL-DEBRIS

Hurricane Katrina Households Model

Landfall is Occurring

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State	Households Per State	Parish	Households Per Parish
		Jefferson	162,000
		Lafourche	14,000
		Livingston	1,000
		Orleans	178,000
		Plaquemines	8,000
		St Bernard	25,000
		St Charles	16,000
		St John Baptist	13,000
		St Tammany	64,000
		Tangipahoa	13,000
		Terrebonne	3,000
		Washington	14,000
Louisiana	511,000		511,000

State	Households Per State	County	Households Per County
		Mobile	25,000
		Washington	1,000
Alabama	26,000		26,000

State	Households Per State	County	Households Per County
		Choctaw	1,000
		Clarke	6,000
		Clay	1,000
		Covington	7,000
		Forrest	27,000
		George	7,000
		Greene	4,000
		Hancock	17,000
		Harrison	72,000
		Jackson	48,000
		Jasper	7,000
		Jeff'n Davis	2,000
		Jones	24,000
		Kemper	1,000
		Lamar	14,000
		Lauderdale	18,000
		Leake	1,000
		Marion	9,000
		Neshoba	10,000
		Newton	8,000
		Noxubee	1,000
		Oktibbeha	6,000
		Pearl River	18,000
		Perry	4,000
		Scott	2,000
		Simpson	1,000
		Smith	5,000
		Stone	5,000
		Walthall	7,000
		Wayne	7,000
		Webster	1,000
		Winston	7,000
Mississippi	348,000		348,000

The number of households estimated to be within hurricane force winds comes from Census 2000 values.

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US Army Corps of Engineers

Hurricane Katrina Households Model

Generated By:
Terry Siemsen, LRL 0700 EDT 08/29/2005

Sources:
HURREVAC
LRL-DEBRIS

Hurricane Katrina Temporary Roofing Model Results

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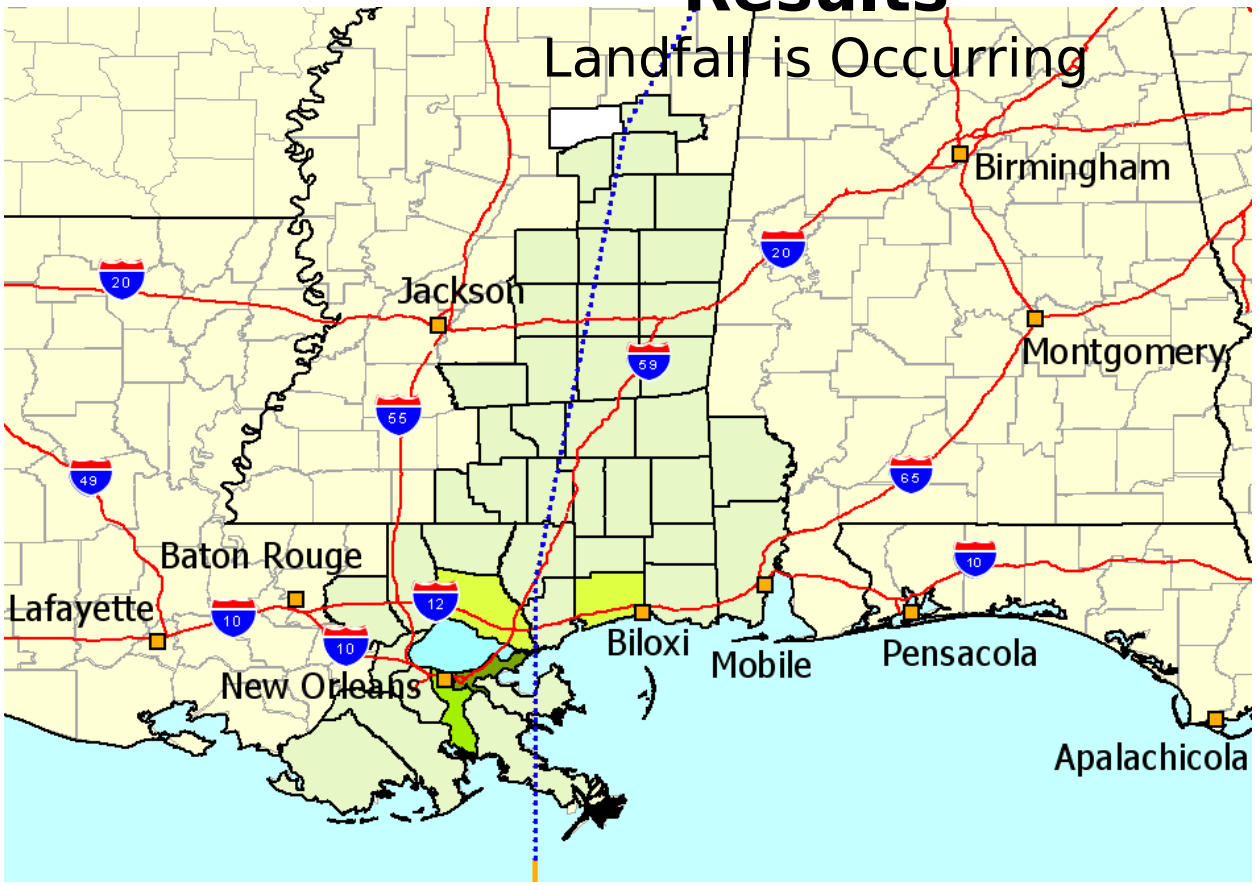

Most Probable Landfall Temporary Roofing Model Results

Louisiana – 17,800
Mississippi – 9,800
Alabama – 300

Model results per county on following page

This model is based on a Category 4 storm making landfall in near proximity to New Orleans, LA.

Information provided on this page displays a Category 4 storm making landfall near New Orleans, LA. These projections are based on information from the NHC ***(0500 EDT 08/29/2005)*** forecast. The amount of temporary roofing that may be required is based on 1% of housing units damaged in CAT 1 wind area, 3% of housing units damaged in CAT 2 wind areas, 5% of housing units damaged in CAT 3 wind areas, and 7% of housing units damaged in CAT 4 wind areas. This only indicates possible need – not necessarily a mission to repair roofs.

Details about this model may be obtained at https://englink.usace.army.mil or contact ENGLink at 1-877-936-4546

US Army Corps of Engineers	**Hurricane Katrina Roofing Model**
Generated By: Terry Siemsen, LRL 0700 EDT 08/29/2005	
Sources: HURREVAC LRL-DEBRIS	Page 12 of 15

Hurricane Katrina Temporary Roofing Model Results

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Landfall is Occurring

State	Parish	Houseunits per Parish
	Jefferson	5,500
	Lafourche	200
	Livingston	100
	Orleans	6,700
	Plaquemines	500
	St Bernard	1,300
	St Charles	200
	St John Baptist	100
	St Tammany	2,700
	Tangipahoa	100
	Terrebonne	100
	Washington	300
Louisiana		17,800

State	County	Houseunits per County
	Mobile	200
	Washington	100
Alabama		300

State	County	Houseunits per County
	Choctaw	100
	Clarke	100
	Clay	100
	Covington	100
	Forrest	800
	George	100
	Greene	100
	Hancock	1,000
	Harrison	2,400
	Jackson	700
	Jasper	100
	Jeff'n Davis	100
	Jones	700
	Kemper	100
	Lamar	600
	Lauderdale	200
	Leake	100
	Marion	100
	Neshoba	100
	Newton	100
	Noxubee	100
	Oktibbeha	100
	Pearl River	900
	Perry	100
	Scott	100
	Simpson	100
	Smith	100
	Stone	200
	Walthall	100
	Wayne	100
	Webster	100
	Winston	100
Mississippi		9,800

THIS IS AN EXPERIMENTAL MODEL !! THE VALUES ARE PRELIMINARY AND SHOULD BE CONSIDERED A GUIDE BUT NOT AN ABSOLUTE VALUE !!

The amount of temporary roofing that may be required is based on 1% of housing units damaged in CAT 1 wind areas, 3% of housing units damaged in CAT 2 wind areas, 5% of housing units damaged in CAT 3 wind areas, and 7% of housing units damaged in CAT 4 wind areas. This only indicates possible need – not necessarily a mission to repair roofs.

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US Army Corps of Engineers

Hurricane Katrina Roofing Model

Generated By:
Terry Siemsen, LRL 0700 EDT 08/29/2005

Sources:
HURREVAC
LRL-DEBRIS

Hurricane Katrina Temporary Housing Model Results

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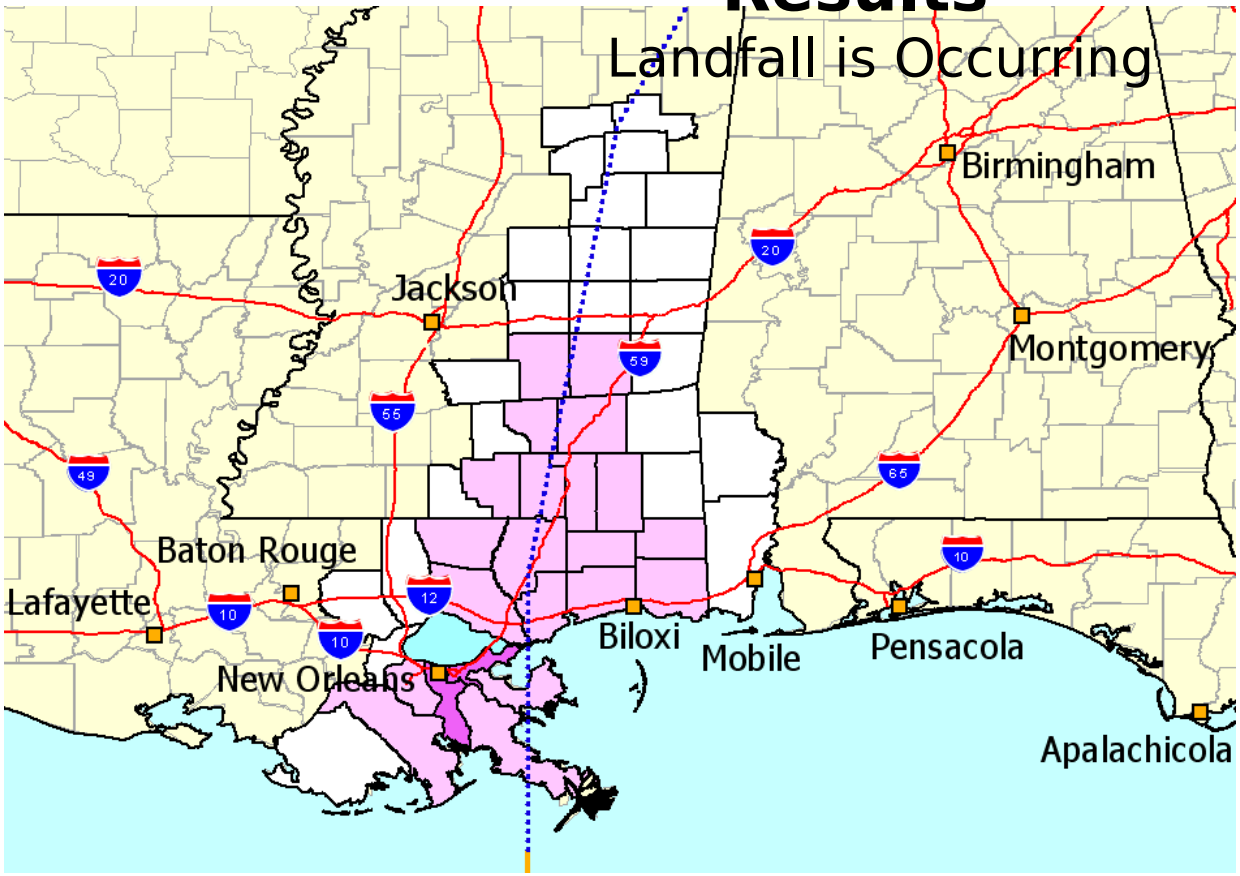

Most Probable Landfall Temporary Housing Model Results

Louisiana – 9,200
Mississippi – 5,900
Alabama – 200

Model results per county on following page

This model is based on a Category 4 storm making landfall in near proximity to New

Information provided on this page displays a Category 4 storm making landfall near New Orleans, LA. These projections are based on information from the NHC (***0500 EDT 08/29/2005***) forecast. The amount of temporary housing that may be required is based on no housing need in CAT 1 wind area, 1% of housing units requiring temporary replacement in CAT 2 wind areas, 3% of housing units requiring temporary replacement in CAT 3 wind areas, and 7% of housing units requiring temporary replacement in CAT 4 wind areas.

Details about this model may be obtained at **https://englink.usace.army.mil** or contact ENGLink at 1-877-936-4546

US Army Corps of Engineers

Hurricane Katrina Housing Model

Generated By:
Terry Siemsen, LRL 0700 EDT 08/29/2005

Sources:
HURREVAC
LRL-DEBRIS

Hurricane Katrina Temporary Housing Model Results

Landfall is Occurring

For Official Use Only!

State	Parish	Houseunits per Parish
	Jefferson	2,300
	Lafourche	100
	Livingston	100
	Orleans	3,200
	Plaquemines	400
	St Bernard	800
	St Charles	100
	St John Baptist	100
	St Tammany	1,800
	Tangipahoa	100
	Terrebonne	100
	Washington	100
Louisiana		9,200

State	County	Houseunits per County
	Mobile	100
	Washington	100
Alabama		200

State	County	Houseunits per County
	Choctaw	100
	Clarke	100
	Clay	100
	Covington	100
	Forrest	300
	George	100
	Greene	100
	Hancock	900
	Harrison	1,000
	Jackson	100
	Jasper	100
	Jeff'n Davis	100
	Jones	200
	Kemper	100
	Lamar	300
	Lauderdale	100
	Leake	100
	Marion	100
	Neshoba	100
	Newton	100
	Noxubee	100
	Oktibbeha	100
	Pearl River	600
	Perry	100
	Scott	100
	Simpson	100
	Smith	100
	Stone	100
	Walthall	100
	Wayne	100
	Webster	100
	Winston	100
Mississippi		5,900

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The amount of temporary housing that may be required is based on no housing need in CAT 1 wind areas, 1% of housing units requiring replacement in CAT 2 wind areas, 3% of housing units requiring replacement in CAT 3 wind areas, and 7% of housing units requiring replacement in CAT 4 wind areas.

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US Army Corps of Engineers

Hurricane Katrina Housing Model

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Sources:
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LRL-DEBRIS